OIPE JC110 JUL 0 2 2004 PATENT & TRADEMARK OFFICE

FILE NO. AP31569 – 070050.0957

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**
**BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

**On Appeal to the Board of Appeals and Interferences**

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|---|---|---|---|---|
| Appellant(s) | : | Hari Kalva et al. | Examiner: | Beatriz Prieto |
| Serial No. | : | 09/240,509 | Art Unit: | 2152 |
| Filed | : | January 29, 1999 | | |
| For | : | CONTROL MESSAGE TECHNIQUE FOR USER INTERACTION IN A TELECOMMUNICATIONS NETWORK | | |

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**BRIEF ON APPEAL**

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June 30, 2004
Date of Deposit

| Paul A. Ragusa | 38,587 |
|---|---|
| Attorney Name | Registration No. |
| Signature | June 30, 2004 |
| | Date of Signature |

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FILE NO. A32866 – 062635.0112

OIPE JC110 JUL 0 2 2004 PATENT & TRADEMARK OFFICE

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Examiner: Beatriz Prieto

Art Unit: 2152

**BRIEF ON APPEAL**

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On January 6, 2004, Appellant filed a Notice of Appeal in the above-identified patent application from the final rejection of claims 1-14 memorialized in the Final Official Action issued by the U.S. Patent and Trademark Office (the "PTO") on July 7, 2003.

In accordance with 37 C.F.R. § 1.192(a), this brief is submitted in triplicate in support of the appeal of the final rejection of pending claims 1-14. For the reasons set forth below, the final rejection of pending claims 1-14 should be reversed.

## I. REAL PARTY IN INTEREST

The real party in interest is The Trustees of Columbia University in the City of New York ("Columbia"). Columbia is the assignee of the entire right, title, and interest in the present application by way of Assignment dated September 15, 1999 and September 29, 1999 recorded on December 2, 1999 at Reel 010424 and Frame 0333.

## II. RELATED APPEALS AND INTERFERENCES

Appellant and the Appellant's legal representatives are unaware of any appeals or interferences related to the present application which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

## III. STATUS OF CLAIMS

Claims 1-14 stand finally rejected under 35 U.S.C. § 103(a) as being unpatentable over Woods et al., *Wired for Speed: Efficient Routes on VRML 2.0* ("Woods") in further view of *COVEN-Collaborative Virtual Environments, ACTS Project No. AC040, D7.2, Review of VRML and WWW Techniques* ("Coven").

A copy of all of the pending claims is attached hereto in the Appendix.

## IV. STATUS OF AMENDMENTS

Subsequent to the issuance of the Final Official Action dated July 7, 2003, no further amendments to the claims have been filed by Appellant.

## V. SUMMARY OF INVENTION

The invention described in the above-identified application is directed to a method for communicating command information between a server and a client across a network in an interactive communication system and a system for accomplishing the same. More particularly, the present invention is suitable for use in communication systems based on the MPEG-4 standard. *See, e.g.*, Appellant's specification, page 1, lines 1-4.

The present invention broadly provides a technique for incorporating server commands into MPEG-4 clients. The technique involves the use of command descriptors, i.e. a special form of descriptors that are transmitted together with the scene description information and contain the command to be sent back to a server upon triggering of an associated event. The desired event sources in the scene description are associated with these command descriptors.

In one embodiment, the association is performed using server routes. These operate similarly to traditional MPEG-4 BIFS routes, but instead of linking a source field with a sink field they link a source field with a sink command descriptor. Server routes require an extension of the MPEG-4 BIFS ROUTE syntax.

In another embodiment, the association is performed using command nodes. Such nodes contain sink fields, and are associated with command descriptors. This technique involves the addition of one more node type to the set of MPEG-4 BIFS nodes.

In both cases, the normal interaction model defined by MPEG-4 can be used for both local interactivity, i.e. events generated and processed on the local clients, as well as server interactivity, i.e. as events generated on the client generate commands that are sent back to the server. Upon triggering of an event associated with a command descriptor, either via a server route or a regular route to a command node, the client obtains the command information stored

in the command descriptor, packages it into a command message, preferably using the syntax provided in the preferred embodiment, and transmits it back to the server using the appropriate back channel.

The data to be carried by the generated command back to the server are contained in the command descriptor. Since command descriptors are part of the overall descriptor framework of MPEG-4, they can be dynamically updated, using time stamped object descriptor updates. This provides considerable flexibility in customizing commands, for example to perform "cookie" management.

To further aid the server in processing the generated command, additional information such as the time the event was generated, the source node, etc., are also contained in the client's message.

## VI. ISSUE(S) ON APPEAL

The issue on appeal is whether the Examiner has failed to establish a *prima facie* case that claims 1-14 are unpatentable under 35 U.S.C. § 103(a), as obvious over Woods in view of Cohen.

## VII. GROUPING OF CLAIMS

Group 1 (method) – Claims 1-7

Group 2 (system) – Claims 8-14

As to the issue on appeal, Appellant respectfully submits that claims of Groups 1 and 2 are separately patentable, and do not stand or fall together. Method and apparatus claims are statutorily recognized as separately patentable subject matter; therefore, the obviousness of one would not necessarily result in the obviousness of the other. 35 U.S.C. § 101.

## VIII. ARGUMENTS

### 1. Prior Art relied on by the Examiner

The Examiner relies on Woods and Cohen in maintaining the final rejection. Woods discloses a specific technique allowing for an implementation of ROUTEs within scene graphs, which enables clients to interact locally with the scene. Woods describes traditional routes routines where the target of the route is another node for a scene. Nothing in Woods discloses or suggests of a route which targets a command descriptor, as required by claims 1 and 8.

Unlike a node, which is internal to a scene that has been downloaded to single computer, a command descriptor comprises information to be transmitted back to a server

computer upon the occurrence of an associated event. Nothing in Woods discloses or suggests such back-channel communication, which is required by client-server arrangements of claims 1 and 8.

Coven is an overview of VRML that was written as part of an ongoing European Union research project. As part of this survey, Coven mentions two possible approaches for providing multi-user support in a VRML environment, namely, Living Worlds and Open Community. Coven § 4.2. Neither of Coven's hypothetical VRML-based solutions make up for the deficiency in Woods to render obvious the client-server based architecture described in the Application.

Accordingly, contrary to the Examiner's assertion, the combination of Woods and Coven does not suggest the client server based architecture described in Claims 1 and 8.

**2. Relevant Case Law and Procedure(s)**

"To reject claims in an application under Section 103, an examiner must show an unrebutted *prima facie* case of obviousness." *In re Rouffet*, 47 U.S.P.Q.2D 1453, 1455 (Fed. Cir. 1998). Using the Supreme Court's guidelines enunciated in *Graham v. John Deere*, 383 U.S. 1, 17 (1966), one determines "obviousness" as follows:

> Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined.

Indeed, to sustain a rejection under 35 U.S.C. § 103(a), there must be a teaching, other than that provided by the instant application, to motivate one skilled in the art to alter the prior art to arrive at the claimed invention. Further "[t]he problem confronted by the inventor must be considered in determining whether it would have been obvious to

combine the references in order to solve the problem." *Diversitech Corp. v. Century Steps, Inc.*, 850 F.2d 675, 679 (Fed. Cir. 1998).

Thus, to establish a *prima facie* case of obviousness, the Examiner has an obligation to construe the scope of the prior art, identify the differences between the claims and the prior art, and determine the level of skill in the pertinent art at the time of the invention. The Examiner must then provide a cogent reason based on the foregoing why it would be obvious to modify the prior art to arrive at the claimed invention. Absent an explanation of "the specific understanding or principle within the knowledge of a skilled artisan that would motivate one with no knowledge of [applicant's] invention to make the combination, [there is an inference] that the examiner selected these references with the assistance of hindsight," which is clearly impermissible. *In re Rouffet*, 47 U.S.P.Q.2d 1453, 1458 (Fed. Cir. 1998). The requirement of there being a credible teaching in the prior art that would motivate one skilled in the pertinent art to alter the prior art to arrive at the claimed invention is a fundamental safeguard against hindsight being used to negate patentability. *Id.* at 1459. As shown below, this requirement is ingrained in the case law. Multiple cited prior art references must suggest the desirability of being combined and the reference must be viewed without the benefit of *hindsight* afforded by the disclosure. *In re Paulsen*, 30 F.3d 1475, 1482 (Fed. Cir. 1994). "It is improper to use the inventor's disclosure as a road map for selecting and combining prior art disclosures." *See Grain Processing Corp. v. American Maize-Products Corp.*, 840 F.2d 902, 907 (Fed. Cir. 1988). The teaching or suggestion to make the claimed combination and the reasonable expectation of success must be found in the prior art, and not be based on Appellant's disclosure. *See In re Vaeck*, 947 F.2d 488 (Fed. Cir. 1991).

Accordingly, when combining references for purposes of demonstrating obviousness of the claimed invention, the first requirement is that a suggestion, teaching, or motivation to combine the prior art references be shown. *C.R. Bard, Inc. v. M3 Sys. Inc.*, 157 F.3d 1340, 1352, 48 U.S.P.Q.2D 1225, 1232 (Fed.Cir.1998). This showing is an "*essential evidentiary component* of an obviousness holding." *Id.* (emphasis added) This evidence may flow from (1) the prior art references themselves, (2) the knowledge of one of ordinary skill in the art, or, in some cases, (3) the nature of the problem to be solved. *Brown & Williamson Tobacco Corp. v. Philip Morris, Inc.*, 229 F.3d 1120, 1125 (Fed. Cir. 2000), *citing Pro-Mold & Tool Co. v. Great Lakes Plastics, Inc.*, 75 F.3d 1568, 1573, 37 U.S.P.Q.2D 1626, 1630 (Fed.Cir. 1996). However, the suggestion more often comes from the teachings of the pertinent references. *See In re Rouffet*, 149 F.3d 1350, 1359, 47 U.S.P.Q.2D 1453, 1459 (Fed.Cir.1998). "This showing must be *clear* and *particular*, and broad conclusory statements about the teaching of multiple references, standing alone, are not "evidence." *Brown & Williamson Tobacco Corp. v. Philip Morris, Inc.*, 229 F.3d 1120, 1125 (Fed. Cir. 2000) (*emphasis added*).

## 3. Issues on Appeal

### Group 1 (method) – Claims 1-7

Appellant respectfully asserts that the alleged combination of Woods and Cohen fails to teach or suggest Appellant's invention, as recited in claims 1-7. As an initial matter, claims 2-7 all depend, directly or indirectly on claim 1, and hence if claim 1 is found to be patentable, all claims depending therefrom would also be patentable. Claim 1 recites a method for communicating command information between a server and a client across a network in an interactive communication system which comprises, *inter alia*:

(a) generating a command message including a command, a command descriptor, and one of a server route for directly associating a node with the command descriptor and a command node for indirectly associating a node with the command descriptor; and

(b) transmitting the command message across a network upon occurrence of a triggering event.

Appellant disagrees with the Examiner's assertion that Woods "teaches features of invention substantially as claimed" in claim 1. Office Action, July 7, 2003, page 1. An important distinction between the VMRL specification [adopted in Woods] and MPEG-4 [adopted by Appellant] is that in the latter, scene descriptions can be updated dynamically using time-stamped commands. In contrast, VRML operates on static "worlds." After a world is loaded, there is no mechanism to modify it. *See, e.g.*, Appellant's Specification, page 6, lines 30-33. Woods merely discloses a VRML scene that is constrained to run as a single process on a single machine. Accordingly, contrary to the Examiner's assertion, Woods fails to disclose or suggest the client server model described by the Appellant. Furthermore, Woods actually teaches away from the client server model by aiming "to provide an efficient implementation of *node-to-node* communication *as required for animation of VRML 2.0 scenes*." Woods, § 7 (emphasis added). *See also* Response to the Office Action, mailed September 5, 2002, pages 3-4.

Even accepting, merely for the sake of argument, the Examiner's assertion that Woods teaches substantially all of the limitation of claim 1, the combination of Woods with Coven fails to render these claims obvious under 35 U.S.C. § 103(a). Contrary to the assertion of the Examiner, Coven does not disclose the implementation of the client server architecture described in the Application. In fact, Coven actually acknowledges that the technology required to implement such a client server architecture was not available as of the date of publication.

Coven is an overview of VRML that was written as part of an ongoing European Union research project. As part of this survey, Coven mentions two possible approaches for providing multi-user support in a VRML environment, namely, Living Worlds and Open Community. Coven § 4.2. In the first instance, neither of these VRML-based approaches address the MPEG-4 client-server architecture disclosed by the Appellant. Second, even if the substantial differences between Coven's VRML-based environment and the Appellant's client server architecture are set aside, Coven provides no information as to how the two proposed approaches would allow client events to be sent to a server or another peer user. For example, Coven describes the Living Worlds architecture as requiring that "[a]nything that can't be done inside the current standard [VRML-based] is declared by definition to be 'MUtech specific.'" Coven, page 16. Coven then proposes that this arrangement would allow suppliers of MUtech—a 'black box' that offers multi-user synchronization—"to experiment with alternative implementation designs, and to access both network and data and arbitrary external applications, without having to introduce any non-standard extensions to VRML 2.0." *Id.* Similarly, for the proposed Open Community solution, the "black box" is a set of Java Application Program Interfaces ("API"s). *Id.* at 19. Such a Java-based system does not correspond to the Appellant's client server architecture. In any event, neither of Coven's hypothetical VRML-based solutions make up for the deficiency in Woods to render obvious the client-server based architecture described in the Application.

In fact, Coven actually acknowledges the shortcomings of the proposed VRML-based solutions by noting that "VMRL was designed so that it would be easy to distribute worlds, *but the base specification does not provide any networking support layers.*" Coven at 29 (emphasis added). Tellingly, Coven expands on these limitations by noting that "[t]he discussion in Section 4.2 indicates that these issues are being addressed, but since *implementation of the*

*technologies are not yet freely available, it is difficult to describe how the [Coven] proposals satisfy the above requirements.*" *Id.* (emphasis added). In other words, Coven merely identifies the need for the type of invention described in claim 1, albeit in a VRML-based environment, in which a client and server communicate interactively over a network. Accordingly, contrary to the Examiner's assertion, the combination of Woods and Coven does not suggest the client server based architecture described in claim 1, and the rejection of claim 1 as obvious is improper. *See C.R. Bard, Inc. v. M3 Sys. Inc.*, 157 F.3d 1340, 1352, 48 U.S.P.Q.2D 1225, 1232 (Fed.Cir.1998).

Since all of the claims in Group 1 recite the limitations relied upon herein to distinguish over the applied references, it is respectfully asserted that the remaining method claims in the present application are likewise patentable. Accordingly, at least for the reasons presented above, Appellant respectfully requests that the Board reverse the Examiner's rejection of claims 1-7 under 35 U.S.C. § 103(a) as being taught or suggested by Woods in view of Cohen.

**Group 2 (system) – Claims 8-14**

Appellant respectfully asserts that the alleged combination of Woods and Cohen also fails to teach or suggest Appellant's invention, as recited in claims 8-14.

Appellant's invention, as recited in independent claim 8, relates to an interactive communications system. Since all of the remaining claims depend directly or indirectly on claim 8, if claim 8 is patentable, so too would the remaining apparatus claims. The system is an interactive communication system comprising means for communicating command information across a network between a server and a client, wherein the means for communicating command information comprises, *inter alia*:

(a) means for generating a command message including a command, a command descriptor, and one of a server route for directly associating a node with the command descriptor and a command node for indirectly associating a node with the command descriptor; and

(b) means for transmitting the command message across a network upon occurrence of a triggering event.

Appellant incorporates herein by reference the arguments distinguishing the method claim 1 over the Woods and Cohen references.

The present invention is likewise distinguishable over Woods, for the reasons discussed above in connection with the method claim 1, and the rejection of claim 8 as obvious is improper. *See C.R. Bard, Inc. v. M3 Sys. Inc.*, 157 F.3d 1340, 1352, 48 U.S.P.Q.2D 1225, 1232 (Fed.Cir.1998).

Since all of the claims in Group 2 recite the limitations relied upon herein to distinguish over the applied references, it is respectfully asserted that the system claims in the present application are patentable. Accordingly, at least for the reasons presented above, Appellant respectfully requests that the Board reverse the Examiner's rejection of claims 8-14 under 35 U.S.C. § 103(a) as being taught or suggested by Woods in view of Cohen.

## IX. CONCLUSION

For at least the reasons indicated above, Appellant respectfully submits that the invention recited in the claims of the present application, as discussed above, is new, non-obvious and useful. Reversal of the Examiner's rejections of the claims is therefore respectfully requested.

Respectfully submitted,

Dated: June 30, 2004

By: _____

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# APPENDIX

Claims as currently pending:

1. A method for communicating command information between a server and a client across a network in an interactive communication system, comprising the steps of:

generating a command message including a command, a command descriptor, and one of a server route for directly associating a node with the command descriptor and a command node for indirectly associating a node with the command descriptor; and

transmitting the command message across a network upon occurrence of a triggering event.

2. The method in accordance with claim 1, wherein the interactive communication system is based on MPEG-4.

3. The method in accordance with claim 2, wherein generating the command message is consistent with the local interactivity model defined in MPEG-4.

4. The method in accordance with claim 1, wherein the triggering event is a mouse click.

5. The method in accordance with claim 1, wherein the triggering event is a timer signal.

6. The method in accordance with claim 1, wherein command information is transmitted from the server to the client.

7. The method in accordance with claim 1, wherein command information is transmitted from the client to the server.

8. An interactive communication system comprising means for communicating command information across a network between a server and a client, wherein the means for communicating command information comprises:

means for generating a command message including a command, a command descriptor, and one of a server route for directly associating a node with the command descriptor and a command node for indirectly associating a node with the command descriptor; and

means for transmitting the command message across a network upon occurrence of a triggering event.

9. The system in accordance with claim 8, based on MPEG-4.

10. The system in accordance with claim 9, wherein generating the command message is consistent with the local interactivity model defined in MPEG-4.

11. The system in accordance with claim 8, wherein the triggering event is a mouse click.

12. The system in accordance with claim 8, wherein the triggering event is a timer signal.

13. The system in accordance with claim 8, wherein command information is transmitted from the server to the client.

14. The system in accordance with claim 8, wherein command information is transmitted from the client to the server.